I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313 on June 20, 2005.

Frank C Eisenschenk

Frank C. Eisenschenk, Patent Attorney

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 CFR 1.322
Docket No. UTR-103XC1
Patent No. 6,855,536

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	:	John T. Loh, Gary Stacey
Issued	:	February 15, 2005
Patent No.	:	6,855,536 09/409,735
For	:	Materials and Methods for the Enhancement of Effective Root Nodulation in Legumes

Mail Stop CERTIFICATE OF CORRECTIONS BRANCH
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION
UNDER 37 CFR 1.322 (OFFICE MISTAKE)

Sir:

A Certificate of Correction (in duplicate) for the above-identified patent has been prepared and is attached hereto.

In the left-hand column below is the column and line number where errors occurred in the patent. In the right-hand column is the page and line number in the application where the correct information appears.

Patent Reads:	**Application Reads:**
Abstract, Line 2: "transcripts"	Page 32, Line 2 (Abstract): --transcription--

Patent Reads:	**Application Reads:**
Abstract, Line 4: "too"	Page 32, Line 3 (Abstract): --to--
Column 3, Line 54: "hi Gram-negative"	Page 5, Lines 10-11: --In Gram-negative--
Column 3, Line 62: "*trifoli*"	Page 5, Line 15: --*trifolii*--
Column 4, Line 4: "by. *viciae*"	Page 5, Line 21: --bv. *viciae*--

A copy of pages 5 and 32 of the specification as filed, which support Applicants' assertion of errors on the part of the Patent Office, accompanies this Certificate of Correction.

Approval of the Certificate of Correction is respectfully requested.

Respectfully submitted,

Frank C. Eisenschenk, Ph.D.
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FCE/ssa
Attachments: Certificate of Correction in duplicate
Copies of pages pages 5 and 32 of the specification as filed,

et al. [1998] *Mol. Microbiol.* 27:1039-1050. Therefore, NolA affects repression indirectly, through the control of $nodD_2$ expression.

Cell-cell signaling plays a large role in the ability of bacteria to respond and adapt to a particular environment. Regulatory systems that control gene expression in response to population density (i.e., quorum sensing) govern such bacterial phenotypes as bioluminescence, antibiotic production, plasmid conjugal transfer and the synthesis of virulence factors in both plant and animal pathogens (Hardman, A.M. *et al.* [1998] *Antonie van Leeuwenhoek* 74:199-210). Quorum sensing involves the recognition of self-produced signal compounds, which function to regulate the expression of genes when threshold levels of these signals have accumulated in cultures of a sufficiently high population density. In Gram-negative bacteria, the best studied of these signals are N-Acyl homoserine-lactones (AHL) (Fuqua, W.C. *et al.* [1994] *J. Bacteriol* 176:269-275). In Gram-positive bacteria, an equivalent role is played by various posttranslationally-modified peptides (Kleerebezem, M. *et al.* [1997] *Mol. Microbiol.* 24:895-904). Several AHL compounds have been identified from rhizobia, including *Rhizobium leguminosarum* biovars *viciae*, *trifolii* and *phaseoli*, *Rhizobium etli*, and *Rhizobium meliloti* (Thorne and Williams [1999] *J. Bacteriol.* 181:981-990; Cha *et al.* [1998] *Mol. Plant Microbe Int.* 11:1119-1129; Gray *et al.* [1996] *J. Bacterial.* 178:372-376; Rosemeyer *et al.* [1998] *J. Bacteriol.* 180:815-821; VanBrussel *et al.* [1985] *J. Bacteriol.* 162:1079-1082; and Wijffelman *et al.* [1983] *Mol. Gen. Genet.* 192:171-176). In a few cases, these autoinducers have been implicated in the nodulation process. For example, the small AHL molecule produced by *R. leguminosarum* bv. *viciae* is required for the expression of the *rhiABC* operon, which is important for rhizosphere growth and nodulation efficiency (Cubo *et al.* [1992] *J. Bacteriol.* 174:4026-4035). In *R. etli*, mutations that disrupt AHL synthesis resulted in decreased nodule numbers on host plants (Rosemeyer *et al.* [1998] *J. Bacteriol.* 180:815-821). Therefore, AHL-mediated quorum sensing may play an important role in the symbiotic process. To date, no quorum-sensing compound has been identified from the soybean symbiont *Bradyrhizobium japonicum*.

The current invention addresses the inefficiency of soil inoculation due to the presence of competing indigenous *B. japonicum* in soil and provides novel compounds and

Abstract of the Disclosure

The subject invention relates to compounds and compositions which induce transcription of the *nolA* gene in nitrogen-fixing bacteria, such as *Bradyrhizobium japonicum*. Novel bacterial strains which are insensitive to NolA, soil inoculants comprising NolA insensitive bacteria and/or *nolA* inducers, and methods of increasing nitrogen fixation in legumes are also disclosed.

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,855,536

DATED : February 15, 2005

INVENTORS : John T. Loh, Gary Stacey

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

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